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SEQUENCE LISTING

<110> CHUGAI SEIYAKU KABUSHIKI KAISHA

<120> BISPECIFIC ANTIBODY SUBSTITUTING FOR FUNCTIONAL PROTEINS

<130> C1-A0313P3

<150> PCT/JP03/13062

<151> 2003-10-10

<150> PCT/JP03/13123

<151> 2003-10-14

<160> 268

<170> PatentIn version 3.1

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4 / 1 1 0

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tgccaagaca aagccgcggg aggagcagtt caacagcacg taccgtgtgg tcagcgtcct	780
caccgtcctg caccaggact ggctgaacgg caaggagtac aagtgaagg tctccaacaa	840
aggcctcccg tcttccatcg agaaaacat ctccaaagcc aaagggcagc cccgagagcc	900
acaggtgtac accctgcccc catcccagtg cgagatgacc aagaaccagg tcagcctgtc	960
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gccggagAAC aactacaaga ccacgcctcc cgtgctggac tccgacggct ccttcttct	1080
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7 / 1 1 0

Gln Ser Leu Ser Leu Thr Cys Ser Val Thr Gly Tyr Ser Ile Thr Ser  
20 25 30

Gly Tyr Tyr Trp Thr Trp Ile Arg Gln Phe Pro Gly Asn Asn Leu Glu  
35 40 45

Trp Ile Gly Tyr Ile Ser Phe Asp Gly Thr Asn Asp Tyr Asn Pro Ser  
50 55 60

Leu Lys Asn Arg Ile Ser Ile Thr Arg Asp Thr Ser Glu Asn Gln Phe  
65 70 75 80

Phe Leu Lys Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr  
85 90 95

Cys Ala Arg Gly Pro Pro Cys Thr Tyr Trp Gly Gln Gly Thr Leu Val  
100 105 110

Thr Val Ser Ala  
115

<210> 14  
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Ser Gly Tyr Tyr Trp Thr  
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<210> 15  
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<212> PRT

<213> Mus musculus

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Ala	Ser	Val	Lys	Leu	Ser	Cys	Thr	Ala	Ser	Gly	Phe	Asn	Ile	Lys	Asp
			20					25						30	

Asp	Tyr	Val	His	Trp	Val	Lys	Gln	Arg	Pro	Glu	Gln	Gly	Leu	Glu	Trp
		35					40					45			

Ile	Gly	Arg	Ile	Asp	Pro	Ala	Asp	Gly	Lys	Thr	Lys	Tyr	Ala	Pro	Lys
	50						55				60				

Phe	Gln	Asp	Lys	Ala	Thr	Met	Thr	Ser	Asp	Thr	Ser	Ser	Asn	Thr	Ala
65						70				75					80



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Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Val Arg Trp Arg Ile Tyr Tyr Gly Leu Met Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Ser Val Thr Val Ser Ser  
115 120

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<213> Mus musculus

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Asp Asp Tyr Val His  
1 5

<210> 19  
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<212> PRT  
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<400> 19

Arg Ile Asp Pro Ala Asp Gly Lys Thr Lys Tyr Ala Pro Lys Phe Gln  
1 5 10 15

Asp

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10/110

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Trp Arg Ile Tyr Tyr Gly Leu Met Asp Tyr  
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<212> PRT

<213> Mus musculus

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Met Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly  
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Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr His  
20 25 30

Phe Val Leu His Trp Val Lys Gln Asn Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Tyr Ile Ile Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ser Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Gly Asn Arg Tyr Asp Val Gly Ser Tyr Ala Met Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

11/110

<210> 22  
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His Phe Val Leu His  
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<210> 23  
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Tyr Ile Ile Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe Lys  
1 5 10 15

Gly

<210> 24  
<211> 13  
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<213> Mus musculus

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Gly Asn Arg Tyr Asp Val Gly Ser Tyr Ala Met Asp Tyr  
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<210> 25  
<211> 117  
<212> PRT  
<213> Mus musculus

1 2 / 1 1 0

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Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly  
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Ala Ser Val Lys Leu Ser Cys Thr Val Ser Gly Phe Asn Ile Gln Asp  
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Asn Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Arg Ile Asp Pro Ala Asn Gly Asn Thr Arg Tyr Asp Pro Lys  
50 55 60

Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Ile Ser Ser Asn Thr Thr  
65 70 75 80

Cys Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Ser Pro Tyr Tyr Pro Leu Gly Cys Trp Gly Gln Gly Thr Leu  
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Val Thr Val Ser Ala  
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<213> Mus musculus

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Asp Asn Tyr Met His  
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13/110

<210> 27  
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<400> 27

Arg Ile Asp Pro Ala Asn Gly Asn Thr Arg Tyr Asp Pro Lys Phe Gln  
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Gly

<210> 28  
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<400> 28

Pro Tyr Tyr Pro Leu Gly Cys  
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<210> 29  
<211> 116  
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<400> 29

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Ala Ser Val Lys Ile Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Glu  
20 25 30

Asn Thr Ile Tyr Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

1 4 / 1 1 0

Ile Gly Ser Ile Thr Thr Tyr Asn Gln Lys Phe Lys Asp Lys Ala Thr  
50 55 60

Leu Thr Ile Asp Lys Ser Ser Ser Ser Ala Tyr Met Glu Leu Arg Ser  
65 70 75 80

Leu Thr Ser Glu Glu Ser Ala Val Tyr Tyr Cys Ala Arg Ser Gly Gly  
85 90 95

Arg Gly Lys Pro Tyr Tyr Phe Asp Ser Trp Gly Gln Gly Thr Thr Leu  
100 105 110

Thr Val Ser Ser  
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Glu Asn Thr Ile Tyr  
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Ser Ile Thr Thr Tyr Asn Gln Lys Phe Lys Asp  
1 5 10

15/110

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Ser Gly Gly Arg Gly Lys Pro Tyr Tyr Phe Asp Ser  
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<400> 33

Met Gln Val Gln Leu Gln Gln Ser Gly Ser Glu Leu Val Lys Pro Gly  
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Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp  
20 25 30

Asn Tyr Met His Trp Ile Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Arg Ile Asp Pro Gly Asn Gly Asn Ser Arg Tyr Asp Pro Lys  
50 55 60

Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala  
65 70 75 80

Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Ser Pro Tyr Tyr Pro Leu Gly Tyr Trp Gly Gln Gly Thr Leu  
100 105 110

1 6 / 1 1 0

Val Thr Val Ser Ala  
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Asp Asn Tyr Met His  
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<210> 35  
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<400> 35

Arg Ile Asp Pro Gly Asn Gly Asn Ser Arg Tyr Asp Pro Lys Phe Gln  
1 5 10 15

Gly

<210> 36  
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<400> 36

Pro Tyr Tyr Pro Leu Gly Tyr  
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17/110

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<400> 37

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly  
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Ala Ser Val Lys Leu Ser Cys Thr Val Ser Gly Phe Asn Ile Lys Asp  
20 25 30

Asp Tyr Ile His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Arg Ile Asp Pro Thr Asn Gly Asn Pro Ala Tyr Ala Pro Lys  
50 55 60

Phe Gln Asp Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Ile Thr Ala  
65 70 75 80

Tyr Leu Gln Leu Asn Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Thr Gly Ser Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val  
100 105 110

Ser Ala

<210> 38  
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<213> Mus musculus

<400> 38

18/110

Asp Asp Tyr Ile His  
1 5

<210> 39  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 39

Arg Ile Asp Pro Thr Asn Gly Asn Pro Ala Tyr Ala Pro Lys Phe Gln  
1 5 10 15

Asp

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Ser Phe Ala Tyr  
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<400> 41

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly  
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Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp  
20 25 30

19/110

Asp Tyr Val His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Arg Ile His Pro Ala Asn Gly Asn Pro Gln Tyr Ala Pro Lys  
50 55 60

Phe Gln Asp Lys Ala Thr Ile Ile Ile Gly Thr Ala Ser Asn Thr Thr  
65 70 75 80

Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Gly Pro Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val  
100 105 110

Ser Ala

<210> 42  
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Asp Asp Tyr Val His  
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<210> 43  
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<400> 43

20/110

Arg Ile His Pro Ala Asn Gly Asn Pro Gln Tyr Ala Pro Lys Phe Gln  
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Asp

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<213> Mus musculus

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Pro Phe Ala Tyr  
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<211> 116  
<212> PRT  
<213> Mus musculus

<400> 45

Met Glu Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser  
1 5 10 15

Gln Ser Leu Ser Leu Thr Cys Ser Val Thr Gly Tyr Ser Ile Thr Ser  
20 25 30

Asn Tyr Tyr Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu  
35 40 45

Trp Met Gly Tyr Ile Asn Tyr Asp Gly Ser Asn Asn Tyr Asn Pro Ser  
50 55 60

Leu Lys Asn Arg Ile Ser Ile Ser Arg Asp Thr Ser Lys Asn Gln Phe  
65 70 75 80

21 / 110

Phe Leu Lys Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr  
85 90 95

Cys Ala Arg Gly Gly Ala Phe Thr Tyr Trp Gly Gln Gly Thr Leu Val  
100 105 110

Thr Val Ser Ala  
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Ser Asn Tyr Tyr Trp Asn  
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<210> 47  
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Tyr Ile Asn Tyr Asp Gly Ser Asn Asn Tyr Asn Pro Ser Leu Lys Asn  
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Gly Gly Ala Phe Thr Tyr

2 2 / 1 1 0

1

5

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<400> 49

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Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Ile Thr Asp  
20 25 30

Asn Lys Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

Ile Gly Tyr Ile Ser Pro Asn Asn Gly Asp Ile Gly Tyr Asn Arg Lys  
50 55 60

Phe Arg Asn Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu His Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg His Arg Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val  
100 105 110

Ser Ala

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Asp Asn Lys Met Asp  
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<210> 51

<211> 17

<212> PRT

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<400> 51

Tyr Ile Ser Pro Asn Asn Gly Asp Ile Gly Tyr Asn Arg Lys Phe Arg  
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Asn

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<400> 52

His Arg Ala Tyr  
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<210> 53

<211> 121

<212> PRT

<213> Mus musculus

<400> 53

Met Asp Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly  
1 5 10 15

2 4 / 1 1 0

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr  
20 25 30

Tyr Ala Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp  
35 40 45

Val Ala Tyr Ile Ser Asn Gly Gly Ala Asn Thr Tyr Tyr Pro Asp Ser  
50 55 60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu  
65 70 75 80

Tyr Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Thr Ala Leu Tyr Tyr  
85 90 95

Cys Ala Arg Gly Gly Tyr Arg Tyr Pro Tyr Ala Met Asp Tyr Trp Gly  
100 105 110

Gln Gly Thr Ser Val Thr Val Ser Ser  
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<210> 54  
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Thr Tyr Ala Met Ser  
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<210> 55  
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25 / 110

<213> Mus musculus

<400> 55

Tyr Ile Ser Asn Gly Gly Ala Asn Thr Tyr Tyr Pro Asp Ser Val Lys  
1 5 10 15

Gly

<210> 56

<211> 11

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<213> Mus musculus

<400> 56

Gly Gly Tyr Arg Tyr Pro Tyr Ala Met Asp Tyr  
1 5 10

<210> 57

<211> 121

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<400> 57

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly  
1 5 10 15

Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser  
20 25 30

Tyr Trp Met His Trp Val Gln Gln Arg Pro Gly Arg Gly Leu Glu Trp  
35 40 45

Ile Gly Arg Ile His Pro Ser Asp Ser Glu Ala Arg Tyr Asn Gln Lys  
50 55 60

2 6 / 1 1 0

Phe Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Ile Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Gly Glu Tyr Pro Ser Tyr Thr Met Asp Tyr Trp Gly  
100 105 110

Gln Gly Thr Thr Leu Thr Val Ser Ser  
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<400> 58

Ser Tyr Trp Met His  
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<210> 59  
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<400> 59

Arg Ile His Pro Ser Asp Ser Glu Ala Arg Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Ser

27/110

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<400> 60

Arg Gly Glu Tyr Pro Ser Tyr Thr Met Asp Tyr  
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<400> 61

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Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser  
20 25 30

Tyr Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Thr Phe Tyr Pro Gly Asn Ser Asp Ser Asn Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Lys Leu Thr Ala Val Thr Ser Thr Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Ser Ser Leu Thr Asn Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Thr Gly Tyr Tyr Gly Asn Tyr Cys Phe Gly Tyr Trp Gly Gln Gly  
100 105 110

28/110

Thr Leu Val Thr Val Ser Ala  
115

<210> 62  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 62

Ser Tyr Trp Met His  
1 5

<210> 63  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 63

Thr Phe Tyr Pro Gly Asn Ser Asp Ser Asn Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 64  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 64

Tyr Tyr Gly Asn Tyr Cys Phe Gly Tyr  
1 5

<210> 65

29/110

<211> 117  
<212> PRT  
<213> Mus musculus

<400> 65

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Leu Ser Cys Ser Ala Ser Gly Phe Asn Ile Lys Asp  
20 25 30

Ser Leu Ile His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Trp Ile Asp Pro Glu Asp Gly Arg Thr Lys Tyr Ala Pro Arg  
50 55 60

Phe Gln Asp Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala  
65 70 75 80

Tyr Leu Gln Leu Ser Gly Leu Thr Ser Glu Asp Thr Ala Ile Tyr Tyr  
85 90 95

Cys Val Arg Trp Val Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Thr  
100 105 110

Leu Thr Val Ser Ser  
115

<210> 66  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 66

30/110

Asp Ser Leu Ile His  
1 5

<210> 67  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 67

Trp Ile Asp Pro Glu Asp Gly Arg Thr Lys Tyr Ala Pro Arg Phe Gln  
1 5 10 15

Asp

<210> 68  
<211> 7  
<212> PRT  
<213> Mus musculus

<400> 68

Trp Val Tyr Tyr Phe Asp Tyr  
1 5

<210> 69  
<211> 123  
<212> PRT  
<213> Mus musculus

<400> 69

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

31 / 110

Tyr Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Glu Ile Asp Ile Ser Asp Gly Ser Thr Thr Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Glu Ser Ser Asn Thr Ala  
65 70 75 80

Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Gly Glu Asp Tyr Asp Gly Ser His Asp Ala Met Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 70

<211> 5

<212> PRT

<213> Mus musculus

<400> 70

Asp Tyr Trp Met His  
1 5

<210> 71

<211> 17

<212> PRT

<213> Mus musculus

<400> 71

3 2 / 1 1 0

Glu Ile Asp Ile Ser Asp Gly Ser Thr Thr Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 72  
<211> 13  
<212> PRT  
<213> Mus musculus

<400> 72

Gly Glu Asp Tyr Asp Gly Ser His Asp Ala Met Asp Tyr  
1 5 10

<210> 73  
<211> 123  
<212> PRT  
<213> Mus musculus

<400> 73

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Met Pro Gly  
1 5 10 15

Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

Tyr Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Glu Ile Asp Ile Ser Asp Ser Ser Thr Thr Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Glu Ser Ser Asn Thr Ala  
65 70 75 80



3 3 / 1 1 0

Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Val Arg Gly Glu Asp Tyr Asp Gly Arg Tyr Asn Val Met Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 74  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 74

Asp Tyr Trp Met His  
1 5

<210> 75  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 75

Glu Ile Asp Ile Ser Asp Ser Ser Thr Thr Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 76  
<211> 13  
<212> PRT  
<213> Mus musculus

3 4 / 1 1 0

<400> 76

Gly Glu Asp Tyr Asp Gly Arg Tyr Asn Val Met Asp Tyr  
1 5 10

<210> 77

<211> 123

<212> PRT

<213> Mus musculus

<400> 77

Met Gln Val Gln Leu Gln Gln Pro Gly Gly Glu Leu Val Met Pro Gly  
1 5 10 15

Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

Tyr Trp Met His Trp Val Arg Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Glu Ile Asp Ile Ser Asp Gly His Thr Thr Tyr Asn Gln Glu  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Glu Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Gln Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Gly Glu Asp Tyr Asp Gly Ser Asn Asp Val Met Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

3 5 / 1 1 0

<210> 78  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 78

Asp Tyr Trp Met His  
1 5

<210> 79  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 79

Glu Ile Asp Ile Ser Asp Gly His Thr Thr Tyr Asn Gln Glu Phe Lys  
1 5 10 15

Gly

<210> 80  
<211> 13  
<212> PRT  
<213> Mus musculus

<400> 80

Gly Glu Asp Tyr Asp Gly Ser Asn Asp Val Met Asp Tyr  
1 5 10

<210> 81  
<211> 123  
<212> PRT  
<213> Mus musculus

3 6 / 1 1 0

<400> 81

Met Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

Tyr Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Glu Ile Asp Ile Ser Asp Ser His Thr Thr Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Glu Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Val Arg Gly Glu Asp Tyr Asp Gly Ser His Asp Val Met Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 82

<211> 5

<212> PRT

<213> Mus musculus

<400> 82

Asp Tyr Trp Met His  
1 5

3 7 / 1 1 0

<210> 83  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 83

Glu Ile Asp Ile Ser Asp Ser His Thr Thr Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 84  
<211> 13  
<212> PRT  
<213> Mus musculus

<400> 84

Gly Glu Asp Tyr Asp Gly Ser His Asp Val Met Asp Tyr  
1 5 10

<210> 85  
<211> 119  
<212> PRT  
<213> Mus musculus

<400> 85

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser  
20 25 30

Ser Trp Met His Trp Ile Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

38/110

Leu Gly Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Lys Tyr Asn Arg Lys  
50 55 60

Phe Arg Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Gln Leu Thr Ser Leu Thr Tyr Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Gly Gly Asn Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly  
100 105 110

Thr Thr Leu Thr Val Ser Ser  
115

<210> 86  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 86

Ser Ser Trp Met His  
1 5

<210> 87  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 87

Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Lys Tyr Asn Arg Lys Phe Arg  
1 5 10 15

3 9 / 1 1 0

Asp

<210> 88  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 88

Gly Gly Asn Gly Tyr Tyr Phe Asp Tyr  
1 5

<210> 89  
<211> 119  
<212> PRT  
<213> Mus musculus

<400> 89

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Thr  
20 25 30

Tyr Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Lys Tyr Asn Gln Lys  
50 55 60

Phe Lys Val Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Gln Leu Ser Ser Leu Thr Asp Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

40 / 110

Cys Ala Asn Gly Asn Leu Gly Tyr Phe Phe Asp Tyr Trp Gly Gln Gly  
100 105 110

Thr Thr Leu Thr Val Ser Ser  
115

<210> 90  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 90

Thr Tyr Trp Met His  
1 5

<210> 91  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 91

Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Lys Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Val

<210> 92  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 92

Gly Asn Leu Gly Tyr Phe Phe Asp Tyr



4 1 / 1 1 0

1

5

<210> 93

<211> 119

<212> PRT

<213> Mus musculus

<400> 93

Met Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp  
20 25 30

Tyr Tyr Met His Trp Ile Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Leu Gly Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Lys Tyr Asn Arg Lys  
50 55 60

Phe Arg Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Gln Leu Thr Ser Leu Thr Tyr Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Gly Gly Asn Gly Tyr Tyr Leu Asp Tyr Trp Gly Gln Gly  
100 105 110

Thr Thr Leu Thr Val Ser Ser  
115

<210> 94

<211> 5

4 2 / 1 1 0

<212> PRT

<213> Mus musculus

<400> 94

Asp Tyr Tyr Met His

1 5

<210> 95

<211> 17

<212> PRT

<213> Mus musculus

<400> 95

Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Lys Tyr Asn Arg Lys Phe Arg

1 5 10 15

Asp

<210> 96

<211> 9

<212> PRT

<213> Mus musculus

<400> 96

Gly Gly Asn Gly Tyr Tyr Leu Asp Tyr

1 5

<210> 97

<211> 118

<212> PRT

<213> Mus musculus

<400> 97

Met Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Met Lys Pro Gly

1 5 10 15

4 3 / 1 1 0

Ala Ser Val Lys Ile Ser Cys Lys Ala Thr Gly Tyr Thr Leu Ser Asn  
20 25 30

Asn Trp Ile Gln Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp  
35 40 45

Ile Gly Glu Ile Leu Pro Gly Ser Asp Thr Ile Asn Tyr Asn Glu Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Phe Thr Ala Asp Ala Ser Ser Asn Thr Ala  
65 70 75 80

Tyr Met Arg Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe  
85 90 95

Cys Ala Arg Glu Gly Ala Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ala  
115

<210> 98

<211> 5

<212> PRT

<213> Mus musculus

<400> 98

Asn Asn Trp Ile Gln  
1 5

<210> 99

<211> 17

<212> PRT

44 / 110

<213> Mus musculus

<400> 99

Glu Ile Leu Pro Gly Ser Asp Thr Ile Asn Tyr Asn Glu Lys Phe Lys  
1 5 10 15

Gly

<210> 100

<211> 8

<212> PRT

<213> Mus musculus

<400> 100

Glu Gly Ala Ser Trp Phe Ala Tyr  
1 5

<210> 101

<211> 118

<212> PRT

<213> Mus musculus

<400> 101

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Met Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Ser Cys Lys Ala Thr Gly Tyr Ser Ile Ser Asn  
20 25 30

His Trp Ile Gln Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp  
35 40 45

Ile Gly Glu Ile Leu Thr Gly Ser Asp Thr Ile Asn Tyr Asn Glu Lys  
50 55 60

4 5 / 1 1 0

Leu Lys Gly Lys Ala Thr Phe Thr Ala Asp Thr Ser Ser Asn Thr Ala  
65 70 75 80

Tyr Met Gln Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Glu Gly Ser Ser Trp Phe Ala His Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ala  
115

<210> 102  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 102

Asn His Trp Ile Gln  
1 5

<210> 103  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 103

Glu Ile Leu Thr Gly Ser Asp Thr Ile Asn Tyr Asn Glu Lys Leu Lys  
1 5 10 15

Gly

4 6 / 1 1 0

<210> 104  
<211> 8  
<212> PRT  
<213> Mus musculus

<400> 104

Glu Gly Ser Ser Trp Phe Ala His  
1 5

<210> 105  
<211> 118  
<212> PRT  
<213> Mus musculus

<400> 105

Met Gln Val Gln Leu Lys Glu Ser Gly Ala Glu Leu Val Arg Ser Gly  
1 5 10 15

Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp  
20 25 30

Tyr Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Trp Ser Asp Pro Glu Asn Gly Asn Thr Ile Tyr Asp Pro Lys  
50 55 60

Phe Gln Gly Lys Ala Ser Ile Thr Ala Asp Thr Ser Ser Asn Ile Ala  
65 70 75 80

Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Gly Gly Arg Arg Ala Met Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

47 / 110

Ser Val Thr Val Ser Ser  
115

<210> 106  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 106

Asp Tyr Tyr Met His  
1 5

<210> 107  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 107

Trp Ser Asp Pro Glu Asn Gly Asn Thr Ile Tyr Asp Pro Lys Phe Gln  
1 5 10 15

Gly

<210> 108  
<211> 8  
<212> PRT  
<213> Mus musculus

<400> 108

Gly Gly Arg Arg Ala Met Asp Tyr  
1 5

<210> 109

48 / 110

<211> 119  
<212> PRT  
<213> Mus musculus

<400> 109

Met Glu Val Met Leu Val Glu Ser Gly Pro Gly Leu Val Lys Pro Ser  
1 5 10 15

Gln Ser Leu Ser Leu Thr Cys Ser Val Thr Gly Tyr Ser Ile Thr Ser  
20 25 30

Gly Tyr Tyr Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu  
35 40 45

Trp Met Gly Tyr Ile Ser Tyr Asp Gly Thr Asn Lys Tyr Asn Pro Ser  
50 55 60

Leu Lys Asn Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe  
65 70 75 80

Phe Leu Lys Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr  
85 90 95

Cys Ala Arg Gly Gly Ser Gly His Ala Met Asp Tyr Trp Gly Gln Gly  
100 105 110

Thr Ser Val Thr Val Ser Ser  
115

<210> 110  
<211> 6  
<212> PRT  
<213> Mus musculus

<400> 110



49/110

Ser Gly Tyr Tyr Trp Asn  
1 5

<210> 111  
<211> 16  
<212> PRT  
<213> Mus musculus

<400> 111

Tyr Ile Ser Tyr Asp Gly Thr Asn Lys Tyr Asn Pro Ser Leu Lys Asn  
1 5 10 15

<210> 112  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 112

Gly Gly Ser Gly His Ala Met Asp Tyr  
1 5

<210> 113  
<211> 123  
<212> PRT  
<213> Mus musculus

<400> 113

Met Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn  
20 25 30

Tyr Leu Met His Trp Val Lys Gln Lys Pro Gly Gln Gly Leu Glu Trp  
35 40 45

50/110

Ile Gly Phe Ile Ile Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Val Thr Ser Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Gly Asn Arg Tyr Asp Val Gly Tyr Tyr Ala Met Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 114  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 114

Asn Tyr Leu Met His  
1 5

<210> 115  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 115

Phe Ile Ile Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe Lys  
1 5 10 15

5 1 / 1 1 0

Gly

<210> 116  
<211> 13  
<212> PRT  
<213> Mus musculus

<400> 116

Gly Asn Arg Tyr Asp Val Gly Tyr Tyr Ala Met Asp Tyr  
1 5 10

<210> 117  
<211> 128  
<212> PRT  
<213> Mus musculus

<400> 117

Met Glu Val Lys Leu Val Glu Ser Gly Gly Gly Ser Val Lys Pro Gly  
1 5 10 15

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser  
20 25 30

Asn Ala Met Ser Trp Val Arg Gln Thr Pro Glu Arg Ser Leu Glu Trp  
35 40 45

Val Ala Thr Ile Ser Ser Ala Gly Arg Ser Thr Tyr Tyr Pro Asp Ser  
50 55 60

Val Lys Gly Arg Phe Ile Ile Ser Arg Asp Asn Leu Lys Asn Ile Leu  
65 70 75 80

Tyr Leu Gln Met Ser Ser Leu Arg Ser Ala Asp Thr Ala Met Tyr Tyr  
85 90 95

5 2 / 1 1 0

Cys Ala Arg His Glu Ala Ser Ile Met Ile Thr Thr Gly Arg Ile Trp  
100 105 110

Ala Trp Phe Gly Asn Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala  
115 120 125

<210> 118  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 118

Ser Asn Ala Met Ser  
1 5

<210> 119  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 119

Thr Ile Ser Ser Ala Gly Arg Ser Thr Tyr Tyr Pro Asp Ser Val Lys  
1 5 10 15

Gly

<210> 120  
<211> 18  
<212> PRT  
<213> Mus musculus

<400> 120

His Glu Ala Ser Ile Met Ile Thr Thr Gly Arg Ile Trp Ala Trp Phe

5 3 / 1 1 0

1                      5                      10                      15

Gly Asn

<210> 121  
<211> 124  
<212> PRT  
<213> Mus musculus

<400> 121

Met Asp Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly  
1                      5                      10                      15

Gly Ser Leu Lys Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Arg Arg  
                    20                      25                      30

Tyr Ala Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp  
                    35                      40                      45

Val Ala Thr Ile Ser Ser Gly Gly Ser Tyr Asn Tyr His Pro Asp Ser  
                    50                      55                      60

Val Lys Asp Arg Leu Thr Ile Ser Arg Asp Asp Ala Lys Asn Thr Leu  
65                      70                      75                      80

Tyr Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr  
                    85                      90                      95

Cys Val Arg His Val Leu Leu Thr Thr Ile Gly Tyr Tyr Ala Ile Asp  
                    100                      105                      110

Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
                    115                      120

5 4 / 1 1 0

<210> 122  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 122

Arg Tyr Ala Met Ser  
1 5

<210> 123  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 123

Thr Ile Ser Ser Gly Gly Ser Tyr Asn Tyr His Pro Asp Ser Val Lys  
1 5 10 15

Asp

<210> 124  
<211> 14  
<212> PRT  
<213> Mus musculus

<400> 124

His Val Leu Leu Thr Thr Ile Gly Tyr Tyr Ala Ile Asp Tyr  
1 5 10

<210> 125  
<211> 124  
<212> PRT  
<213> Mus musculus

5 5 / 1 1 0

<400> 125

Met Glu Val Gln Leu Gln Gln Ser Gly Gly Val Leu Val Lys Pro Gly  
1 5 10 15

Arg Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg  
20 25 30

Tyr Thr Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp  
35 40 45

Val Ala Thr Ile Ser Gly Gly Gly Ser Tyr Thr Tyr Tyr Pro Asp Ser  
50 55 60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu  
65 70 75 80

Tyr Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr  
85 90 95

Cys Ala Arg His Val Leu Gln Thr Met Ile Gly Tyr Tyr Ala Val Asp  
100 105 110

Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 126

<211> 5

<212> PRT

<213> Mus musculus

<400> 126

Arg Tyr Thr Met Ser  
1 5

56 / 110

<210> 127  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 127

Thr Ile Ser Gly Gly Gly Ser Tyr Thr Tyr Tyr Pro Asp Ser Val Lys  
1 5 10 15

Gly

<210> 128  
<211> 14  
<212> PRT  
<213> Mus musculus

<400> 128

His Val Leu Gln Thr Met Ile Gly Tyr Tyr Ala Val Asp Tyr  
1 5 10

<210> 129  
<211> 124  
<212> PRT  
<213> Mus musculus

<400> 129

Met Glu Val Lys Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly  
1 5 10 15

Arg Ser Leu Lys Val Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg  
20 25 30

Tyr Thr Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp  
35 40 45



57/110

Val Ala Thr Ile Ser Gly Gly Gly Tyr Thr Tyr Tyr Pro Asp Ser  
50 55 60

Val Lys Gly Arg Phe Thr Ile Ser Arg Glu Asn Ala Lys Asn Thr Leu  
65 70 75 80

Tyr Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Val Arg His Val Leu Gln Thr Thr Ile Gly Tyr Tyr Ala Val Asp  
100 105 110

Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 130  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 130

Arg Tyr Thr Met Ser  
1 5

<210> 131  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 131

Thr Ile Ser Gly Gly Gly Tyr Thr Tyr Tyr Pro Asp Ser Val Lys  
1 5 10 15

58/110

Gly

<210> 132  
<211> 14  
<212> PRT  
<213> Mus musculus

<400> 132

His Val Leu Gln Thr Thr Ile Gly Tyr Tyr Ala Val Asp Tyr  
1 5 10

<210> 133  
<211> 124  
<212> PRT  
<213> Mus musculus

<400> 133

Met Glu Val Lys Leu Val Glu Ser Gly Gly Gly Leu Val Lys Ala Gly  
1 5 10 15

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg  
20 25 30

Tyr Ala Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp  
35 40 45

Val Ala Thr Ile Ser Ser Gly Gly Arg Tyr Thr Tyr Tyr Pro Asp Ser  
50 55 60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ala Gln Asn Thr Leu  
65 70 75 80

Tyr Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr  
85 90 95

59 / 110

Cys Ala Arg His Leu Leu Gln Thr Met Ile Gly Tyr Tyr Ala Met Asp  
100 105 110

Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 134  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 134

Arg Tyr Ala Met Ser  
1 5

<210> 135  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 135

Thr Ile Ser Ser Gly Gly Arg Tyr Thr Tyr Tyr Pro Asp Ser Val Lys  
1 5 10 15

Gly

<210> 136  
<211> 14  
<212> PRT  
<213> Mus musculus

<400> 136

His Leu Leu Gln Thr Met Ile Gly Tyr Tyr Ala Met Asp Tyr

60/110

1 5 10

<210> 137

<211> 120

<212> PRT

<213> Mus musculus

<400> 137

Met Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

His Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Asn Pro Asn Phe Asp Thr Thr Ile Tyr Asn Gln Lys  
50 55 60

Phe Arg Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Arg Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Gly Tyr Tyr Arg Phe Asp Leu Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Leu Thr Val Ser Ser  
115 120

<210> 138

<211> 5

6 1 / 1 1 0

<212> PRT

<213> Mus musculus

<400> 138

Asp His Asn Met Asp

1 5

<210> 139

<211> 17

<212> PRT

<213> Mus musculus

<400> 139

Asp Ile Asn Pro Asn Phe Asp Thr Thr Ile Tyr Asn Gln Lys Phe Arg

1 5 10 15

Gly

<210> 140

<211> 10

<212> PRT

<213> Mus musculus

<400> 140

Arg Gly Tyr Tyr Arg Phe Asp Leu Asp Tyr

1 5 10

<210> 141

<211> 120

<212> PRT

<213> Mus musculus

<400> 141

Met Gln Val Gln Leu Gln Gln Phe Gly Ala Glu Leu Val Lys Pro Gly

1 5 10 15

6 2 / 1 1 0

Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Phe Thr Phe Thr Asp  
20 25 30

Asn Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Asn Pro Asn Tyr Asp Ser Thr Ala Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Arg Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Lys Arg Arg Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Leu Thr Val Ser Ser  
115 120

<210> 142

<211> 5

<212> PRT

<213> Mus musculus

<400> 142

Asp Asn Asn Met Asp  
1 5

<210> 143

<211> 17

<212> PRT

6 3 / 1 1 0

<213> Mus musculus

<400> 143

Asp	Ile	Asn	Pro	Asn	Tyr	Asp	Ser	Thr	Ala	Tyr	Asn	Gln	Lys	Phe	Lys
1				5					10					15	

Gly

<210> 144

<211> 11

<212> PRT

<213> Mus musculus

<400> 144

Arg	Arg	Lys	Arg	Arg	Gly	Tyr	Tyr	Phe	Asp	Tyr
1				5					10	

<210> 145

<211> 120

<212> PRT

<213> Mus musculus

<400> 145

Met	Glu	Val	Gln	Leu	Gln	Gln	Ser	Gly	Ala	Glu	Leu	Val	Arg	Pro	Gly
1				5					10					15	

Ala	Ser	Val	Lys	Ile	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	Thr	Asp
			20					25					30		

Asn	Asn	Met	Asp	Trp	Val	Lys	Gln	Ser	His	Gly	Lys	Ser	Leu	Glu	Trp
		35					40					45			

Ile	Gly	Asp	Val	Asn	Pro	Asn	Tyr	Asp	Ser	Thr	Met	Tyr	Asn	Gln	Lys
	50					55					60				

6 4 / 1 1 0

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Ile Arg Arg Gly Tyr Ser Phe Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Leu Thr Val Ser Ser  
115 120

<210> 146

<211> 5

<212> PRT

<213> Mus musculus

<400> 146

Asp Asn Asn Met Asp  
1 5

<210> 147

<211> 17

<212> PRT

<213> Mus musculus

<400> 147

Asp Val Asn Pro Asn Tyr Asp Ser Thr Met Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly



65/110

<210> 148  
<211> 10  
<212> PRT  
<213> Mus musculus

<400> 148

Arg Ile Arg Arg Gly Tyr Ser Phe Asp Tyr  
1 5 10

<210> 149  
<211> 120  
<212> PRT  
<213> Mus musculus

<400> 149

Met Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

Asn Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Asn Pro Asn Tyr Asp Ser Thr Ile Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Asn Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Ile Tyr Tyr Gly Tyr Ala Leu Asp Tyr Trp Gly Gln  
100 105 110

6 6 / 1 1 0

Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 150  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 150

Asp Asn Asn Met Asp  
1 5

<210> 151  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 151

Asp Ile Asn Pro Asn Tyr Asp Ser Thr Ile Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 152  
<211> 10  
<212> PRT  
<213> Mus musculus

<400> 152

Arg Ile Tyr Tyr Gly Tyr Ala Leu Asp Tyr  
1 5 10

<210> 153

6 7 / 1 1 0

<211> 120  
<212> PRT  
<213> Mus musculus

<400> 153

Met Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

His Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Asn Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Asn Pro Asn Tyr Asp Ser Val Ile Ser Asp Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Leu Arg Gly Gly Phe Ala Met Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 154  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 154

68/110

Asp His Asn Met Asp  
1 5

<210> 155  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 155

Asp Ile Asn Pro Asn Tyr Asp Ser Val Ile Ser Asp Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 156  
<211> 10  
<212> PRT  
<213> Mus musculus

<400> 156

Arg Leu Arg Gly Gly Phe Ala Met Asp Tyr  
1 5 10

<210> 157  
<211> 120  
<212> PRT  
<213> Mus musculus

<400> 157

Met Gln Val Gln Leu Gln Gln Ser Gly Thr Val Leu Ala Arg Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

6 9 / 1 1 0

Tyr Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Asn Pro Asn Tyr Asp Ser Thr Ile Tyr Lys Gln Asn  
50 55 60

Phe Lys Gly Arg Ala Thr Leu Thr Val Asp Arg Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Met Arg Arg Gly Tyr Ala Met Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 158  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 158

Asp Tyr Asn Met Asp  
1 5

<210> 159  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 159

70/110

Asp Ile Asn Pro Asn Tyr Asp Ser Thr Ile Tyr Lys Gln Asn Phe Lys  
1 5 10 15

Gly

<210> 160  
<211> 10  
<212> PRT  
<213> Mus musculus

<400> 160

Arg Met Arg Arg Gly Tyr Ala Met Asp Tyr  
1 5 10

<210> 161  
<211> 120  
<212> PRT  
<213> Mus musculus

<400> 161

Met Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

Asn Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Gly Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Asn Thr Lys Ser Gly Gly Ser Ile Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ile Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

7 1 / 1 1 0

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Arg Ser Tyr Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Leu Thr Val Ser Ser  
115 120

<210> 162  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 162

Asp Asn Asn Met Asp  
1 5

<210> 163  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 163

Asp Ile Asn Thr Lys Ser Gly Gly Ser Ile Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 164  
<211> 10  
<212> PRT  
<213> Mus musculus

7 2 / 1 1 0

<400> 164

Arg Arg Ser Tyr Gly Tyr Tyr Phe Asp Tyr  
1 5 10

<210> 165

<211> 120

<212> PRT

<213> Mus musculus

<400> 165

Met Gln Val Gln Leu Lys Gln Ser Gly Ala Glu Leu Val Thr Pro Gly  
1 5 10 15

Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

Asn Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Asn Pro Asn Tyr Asp Ser Thr Ala Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Val Arg Arg Gly Tyr His Phe Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Leu Thr Val Ser Ser  
115 120



7 3 / 1 1 0

<210> 166  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 166

Asp Asn Asn Met Asp  
1 5

<210> 167  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 167

Asp Ile Asn Pro Asn Tyr Asp Ser Thr Ala Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 168  
<211> 10  
<212> PRT  
<213> Mus musculus

<400> 168

Arg Val Arg Arg Gly Tyr His Phe Asp Tyr  
1 5 10

<210> 169  
<211> 122  
<212> PRT  
<213> Mus musculus

7 4 / 1 1 0

<400> 169

Met Glu Val Gln Leu Gln Gln Ser Arg Pro Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Glu  
20 25 30

Asn Ala Leu Tyr Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

Ile Gly Ile Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Asn Gln Lys  
50 55 60

Phe Lys Asp Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Ser Gly Gly Arg Gly Gln Pro Tyr Tyr Phe Asp Tyr Trp  
100 105 110

Gly Gln Gly Thr Thr Leu Thr Val Ser Ser  
115 120

<210> 170

<211> 5

<212> PRT

<213> Mus musculus

<400> 170

Glu Asn Ala Leu Tyr  
1 5

7 5 / 1 1 0

<210> 171  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 171

Ile Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Asp

<210> 172  
<211> 12  
<212> PRT  
<213> Mus musculus

<400> 172

Ser Gly Gly Arg Gly Gln Pro Tyr Tyr Phe Asp Tyr  
1 5 10

<210> 173  
<211> 118  
<212> PRT  
<213> Mus musculus

<400> 173

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly  
1 5 10 15

Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser  
20 25 30

Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

76/110

Ile Gly Ala Ile Tyr Pro Gly Asp Gly Asp Thr Arg Tyr Thr Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met His Leu Ser Ser Leu Ala Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Asp Gly Tyr Asp Leu Phe Ala Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ala  
115

<210> 174

<211> 5

<212> PRT

<213> Mus musculus

<400> 174

Ser Tyr Trp Met Gln  
1 5

<210> 175

<211> 17

<212> PRT

<213> Mus musculus

<400> 175

Ala Ile Tyr Pro Gly Asp Gly Asp Thr Arg Tyr Thr Gln Lys Phe Lys  
1 5 10 15

77/110

Gly

<210> 176  
<211> 8  
<212> PRT  
<213> Mus musculus

<400> 176

Asp Gly Tyr Asp Leu Phe Ala Tyr  
1 5

<210> 177  
<211> 118  
<212> PRT  
<213> Mus musculus

<400> 177

Met Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly  
1 5 10 15

Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn  
20 25 30

Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Ala Ile Tyr Pro Gly Asp Gly Asp Ile Arg Ile Thr Gln Lys  
50 55 60

Phe Arg Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

78/110

Cys Ala Arg Asp Gly Tyr Asp Leu Phe Ala Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ala  
115

<210> 178  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 178

Asn Tyr Trp Met Gln  
1 5

<210> 179  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 179

Ala Ile Tyr Pro Gly Asp Gly Asp Ile Arg Ile Thr Gln Lys Phe Arg  
1 5 10 15

Gly

<210> 180  
<211> 8  
<212> PRT  
<213> Mus musculus

<400> 180

Asp Gly Tyr Asp Leu Phe Ala Tyr

7 9 / 1 1 0

1

5

<210> 181

<211> 117

<212> PRT

<213> Mus musculus

<400> 181

Met Asp Val Gln Leu Val Glu Ser Gly Pro Gly Leu Val Lys Pro Ser  
1 5 10 15

Gln Ser Leu Ser Leu Thr Cys Ser Val Thr Gly Tyr Ser Ile Thr Ser  
20 25 30

Gly Tyr Tyr Leu Asn Trp Ile Arg Gln Phe Pro Gly His Lys Leu Glu  
35 40 45

Trp Met Gly Tyr Ile Ser Tyr Asp Gly Asn Asn Arg Tyr Asn Pro Ser  
50 55 60

Leu Lys Asn Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe  
65 70 75 80

Phe Leu Lys Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr  
85 90 95

Cys Ala Ser Phe Phe Tyr Gly Lys His Asp Trp Gly Gln Gly Thr Thr  
100 105 110

Leu Thr Val Ser Ser  
115

<210> 182

<211> 6

80/110

<212> PRT

<213> Mus musculus

<400> 182

Ser Gly Tyr Tyr Leu Asn  
1 5

<210> 183

<211> 16

<212> PRT

<213> Mus musculus

<400> 183

Tyr Ile Ser Tyr Asp Gly Asn Asn Arg Tyr Asn Pro Ser Leu Lys Asn  
1 5 10 15

<210> 184

<211> 7

<212> PRT

<213> Mus musculus

<400> 184

Phe Phe Tyr Gly Lys His Asp  
1 5

<210> 185

<211> 115

<212> PRT

<213> Mus musculus

<400> 185

Met Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Arg  
20 25 30



81 / 110

Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Gly Gly Leu Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr  
100 105 110

Val Ser Ser  
115

<210> 186  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 186

Arg Ser Trp Met Asn  
1 5

<210> 187  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 187

8 2 / 1 1 0

Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe Lys  
1 5 10 15

Gly

<210> 188  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 188

Gly Gly Leu Asp Tyr  
1 5

<210> 189  
<211> 119  
<212> PRT  
<213> Mus musculus

<400> 189

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly  
1 5 10 15

Ser Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Arg  
20 25 30

Tyr Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp  
35 40 45

Ile Gly Gln Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

83/110

Tyr Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser Ala Val Tyr Phe  
85 90 95

Cys Ala Arg Gly Arg Gly Tyr Ser Ala Met Asp Tyr Trp Gly Gln Gly  
100 105 110

Thr Ser Val Thr Val Ser Ser  
115

<210> 190  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 190

Arg Tyr Trp Met Asn  
1 5

<210> 191  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 191

Gln Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe Lys  
1 5 10 15

Gly

<210> 192  
<211> 9  
<212> PRT  
<213> Mus musculus

84/110

<400> 192

Gly Arg Gly Tyr Ser Ala Met Asp Tyr  
1 5

<210> 193

<211> 120

<212> PRT

<213> Mus musculus

<400> 193

Met Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Pro Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

Tyr Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Asp Pro Asn Asn Gly Gly Ala Leu Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Pro Val Tyr Tyr Tyr Ala Met Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Ser Val Thr Val Ser Ser  
115 120

8 5 / 1 1 0

<210> 194  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 194

Asp Tyr Asn Met Asp  
1 5

<210> 195  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 195

Asp Ile Asp Pro Asn Asn Gly Gly Ala Leu Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 196  
<211> 10  
<212> PRT  
<213> Mus musculus

<400> 196

Arg Pro Val Tyr Tyr Tyr Ala Met Asp Tyr  
1 5 10

<210> 197  
<211> 120  
<212> PRT  
<213> Mus musculus

86 / 110

<400> 197

Met His Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly  
1 5 10 15

Ala Ser Val Lys Ile Pro Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp  
20 25 30

Asn Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Asn Pro Asn Asn Gly Gly Thr Ile Tyr Asn Gln Lys  
50 55 60

Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Arg Gly Tyr Tyr Gly Arg Thr Phe Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Leu Thr Val Ser Ser  
115 120

<210> 198

<211> 5

<212> PRT

<213> Mus musculus

<400> 198

Asp Asn Asn Met Asp  
1 5

87/110

<210> 199  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 199

Asp Ile Asn Pro Asn Asn Gly Gly Thr Ile Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 200  
<211> 10  
<212> PRT  
<213> Mus musculus

<400> 200

Arg Gly Tyr Tyr Gly Arg Thr Phe Asp Tyr  
1 5 10

<210> 201  
<211> 117  
<212> PRT  
<213> Mus musculus

<400> 201

Met Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly  
1 5 10 15

Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp  
20 25 30

Asp Tyr Met His Trp Val Asn Gln Arg Pro Glu Gln Gly Leu Glu Trp  
35 40 45

88/110

Ile Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys  
50 55 60

Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala  
65 70 75 80

Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Thr Tyr Gly Ile Tyr Val Arg Gly Tyr Trp Gly Gln Gly Thr Thr  
100 105 110

Leu Thr Val Ser Ser  
115

<210> 202  
<211> 5  
<212> PRT  
<213> Mus musculus

<400> 202

Asp Asp Tyr Met His  
1 5

<210> 203  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 203

Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln  
1 5 10 15



89/110

Gly

<210> 204  
<211> 7  
<212> PRT  
<213> Mus musculus

<400> 204

Gly Ile Tyr Val Arg Gly Tyr  
1 5

<210> 205  
<211> 107  
<212> PRT  
<213> Mus musculus

<400> 205

Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly  
1 5 10 15

Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Gly Thr Ala  
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile  
35 40 45

Tyr Trp Ala Ser Thr Arg His Thr Gly Val Pro Asp Arg Phe Thr Gly  
50 55 60

Ser Arg Tyr Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser  
65 70 75 80

Glu Asp Leu Ala Asp Tyr Leu Cys Gln Gln Tyr Ser Asn Tyr Ile Thr  
85 90 95

90/110

Phe Gly Gly Gly Thr Lys Leu Glu Leu Lys Arg  
100 105

<210> 206  
<211> 11  
<212> PRT  
<213> Mus musculus

<400> 206

Lys Ala Ser Gln Asp Val Gly Thr Ala Val Ala  
1 5 10

<210> 207  
<211> 7  
<212> PRT  
<213> Mus musculus

<400> 207

Trp Ala Ser Thr Arg His Thr  
1 5

<210> 208  
<211> 8  
<212> PRT  
<213> Mus musculus

<400> 208

Gln Gln Tyr Ser Asn Tyr Ile Thr  
1 5

<210> 209  
<211> 108  
<212> PRT  
<213> Mus musculus

91/110

<400> 209

Asp Ile Val Leu Thr Gln Ser Gln Lys Phe Met Ser Thr Ser Val Gly  
1 5 10 15

Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asn Val Gly Thr Ala  
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala Leu Ile  
35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg Phe Thr Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser  
65 70 75 80

Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser Tyr Pro Leu  
85 90 95

Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg  
100 105

<210> 210

<211> 11

<212> PRT

<213> Mus musculus

<400> 210

Lys Ala Ser Gln Asn Val Gly Thr Ala Val Ala  
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<210> 211

<211> 7

<212> PRT

9 2 / 1 1 0

<213> Mus musculus

<400> 211

Ser Ala Ser Tyr Arg Tyr Ser  
1 5

<210> 212

<211> 9

<212> PRT

<213> Mus musculus

<400> 212

Gln Gln Tyr Asn Ser Tyr Pro Leu Thr  
1 5

<210> 213

<211> 107

<212> PRT

<213> Mus musculus

<400> 213

Asp Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Leu Gly  
1 5 10 15

Glu Lys Val Thr Met Ser Cys Arg Ala Thr Ser Ser Val Asn Tyr Ile  
20 25 30

Tyr Trp Tyr Gln Gln Lys Ser Asp Ala Ser Pro Lys Leu Trp Ile Phe  
35 40 45

Tyr Thr Ser Asn Leu Ala Pro Gly Val Pro Pro Arg Phe Ser Gly Ser  
50 55 60

Gly Ser Gly Asn Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu  
65 70 75 80

93/110

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Phe Ser Ser Ser Pro Trp Thr  
85 90 95

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg  
100 105

<210> 214  
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<400> 214

Arg Ala Thr Ser Ser Val Asn Tyr Ile Tyr  
1 5 10

<210> 215  
<211> 6  
<212> PRT  
<213> Mus musculus

<400> 215

Thr Ser Asn Leu Ala Pro  
1 5

<210> 216  
<211> 9  
<212> PRT  
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<400> 216

Gln Gln Phe Ser Ser Ser Pro Trp Thr  
1 5

<210> 217

94/110

<211> 114  
<212> PRT  
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<400> 217

Asp Ile Val Met Thr Gln Ser Pro Ser Ser Leu Ala Val Ser Val Gly  
1                      5                      10                      15

Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser  
                    20                      25                      30

Ser Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
                    35                      40                      45

Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val  
                    50                      55                      60

Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65                      70                      75                      80

Ile Ser Ser Val Lys Ala Glu Asp Leu Ala Val Tyr Leu Cys Gln Gln  
                    85                      90                      95

Tyr Tyr Arg Phe Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
                    100                      105                      110

Lys Arg

<210> 218  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 218

95/110

Lys Ser Ser Gln Ser Leu Leu Tyr Ser Ser Asn Gln Lys Asn Tyr Leu  
1 5 10 15

Ala

<210> 219  
<211> 7  
<212> PRT  
<213> Mus musculus

<400> 219

Trp Ala Ser Thr Arg Glu Ser  
1 5

<210> 220  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 220

Gln Gln Tyr Tyr Arg Phe Pro Tyr Thr  
1 5

<210> 221  
<211> 18  
<212> DNA  
<213> Mus musculus

<220>  
<221> CDS  
<222> (1)..(18)  
<223>

<400> 221  
agt ggt tat tac tgg acc  
Ser Gly Tyr Tyr Trp Thr

1 5

<210> 222  
 <211> 6  
 <212> PRT  
 <213> Mus musculus

<400> 222

Ser Gly Tyr Tyr Trp Thr  
 1 5

<210> 223  
 <211> 48  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (1)..(48)  
 <223>

<400> 223

tac	ata	tcc	ttc	gac	ggt	acc	aat	gac	tac	aac	cca	tct	ctc	aaa	aat	48
Tyr	Ile	Ser	Phe	Asp	Gly	Thr	Asn	Asp	Tyr	Asn	Pro	Ser	Leu	Lys	Asn	
1					5				10					15		

<210> 224  
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 <212> PRT  
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<400> 224

Tyr	Ile	Ser	Phe	Asp	Gly	Thr	Asn	Asp	Tyr	Asn	Pro	Ser	Leu	Lys	Asn
1					5				10					15	

<210> 225  
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<213> Mus musculus

<220>

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<222> (1)..(18)

<223>

<400> 225

ggc ccc ccc tgt act tac

Gly Pro Pro Cys Thr Tyr

1

5

18

<210> 226

<211> 6

<212> PRT

<213> Mus musculus

<400> 226

Gly Pro Pro Cys Thr Tyr

1

5

<210> 227

<211> 30

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)..(30)

<223>

<400> 227

agg gcc acc tca agt gta aat tac att tac

Arg Ala Thr Ser Ser Val Asn Tyr Ile Tyr

1

5

10

30

<210> 228

<211> 10

<212> PRT

<213> Mus musculus

<400> 228

Arg Ala Thr Ser Ser Val Asn Tyr Ile Tyr  
1 5 10

<210> 229

<211> 18

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)..(18)

<223>

<400> 229

aca tcc aac ctg gct cct  
Thr Ser Asn Leu Ala Pro  
1 5

18

<210> 230

<211> 6

<212> PRT

<213> Mus musculus

<400> 230

Thr Ser Asn Leu Ala Pro  
1 5

<210> 231

<211> 27

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)..(27)

<223>

&lt;400&gt; 231

cag cag ttt tct agt tcc cca tgg acg

27

Gln Gln Phe Ser Ser Ser Pro Trp Thr

1

5

&lt;210&gt; 232

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 232

Gln Gln Phe Ser Ser Ser Pro Trp Thr

1

5

&lt;210&gt; 233

&lt;211&gt; 15

&lt;212&gt; DNA

&lt;213&gt; Mus musculus

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(15)

&lt;223&gt;

&lt;400&gt; 233

cac ttt gtt ttg cac

15

His Phe Val Leu His

1

5

&lt;210&gt; 234

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 234

His Phe Val Leu His

1

5

100/110

<210> 235  
<211> 48  
<212> DNA  
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<220>  
<221> CDS  
<222> (1).. (48)  
<223>

<400> 235  
tat att att cct tac aat gat ggt act aag tac aat gag aag ttc aaa 48  
Tyr Ile Ile Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe Lys  
1 5 10 15

<210> 236  
<211> 16  
<212> PRT  
<213> Mus musculus

<400> 236  
Tyr Ile Ile Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe Lys  
1 5 10 15

<210> 237  
<211> 39  
<212> DNA  
<213> Mus musculus

<220>  
<221> CDS  
<222> (1).. (39)  
<223>

<400> 237  
ggg aat agg tac gac gta ggt tcc tat gct atg gac tac 39  
Gly Asn Arg Tyr Asp Val Gly Ser Tyr Ala Met Asp Tyr  
1 5 10

<210> 238

1 0 1 / 1 1 0

<211> 13  
<212> PRT  
<213> Mus musculus

<400> 238

Gly Asn Arg Tyr Asp Val Gly Ser Tyr Ala Met Asp Tyr  
1 5 10

<210> 239  
<211> 51  
<212> DNA  
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<220>  
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<222> (1)..(51)  
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<400> 239

aag tcc agt cag agc ctt tta tat agt agc aat caa aag aac tac ttg  
Lys Ser Ser Gln Ser Leu Leu Tyr Ser Ser Asn Gln Lys Asn Tyr Leu  
1 5 10 15

48

gcc  
51  
Ala

<210> 240  
<211> 17  
<212> PRT  
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<400> 240

Lys Ser Ser Gln Ser Leu Leu Tyr Ser Ser Asn Gln Lys Asn Tyr Leu  
1 5 10 15

Ala

1 0 2 / 1 1 0

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<211> 21  
<212> DNA  
<213> Mus musculus

<220>  
<221> CDS  
<222> (1).. (21)  
<223>

<400> 241  
tgg gca tcc act agg gaa tct  
Trp Ala Ser Thr Arg Glu Ser  
1 5

21

<210> 242  
<211> 7  
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<400> 242

Trp Ala Ser Thr Arg Glu Ser  
1 5

<210> 243  
<211> 27  
<212> DNA  
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<220>  
<221> CDS  
<222> (1).. (27)  
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<400> 243  
cag caa tat tat agg ttt ccg tac acg  
Gln Gln Tyr Tyr Arg Phe Pro Tyr Thr  
1 5

27

1 0 3 / 1 1 0

<210> 244  
<211> 9  
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<400> 244

Gln Gln Tyr Tyr Arg Phe Pro Tyr Thr  
1 5

<210> 245  
<211> 15  
<212> DNA  
<213> Mus musculus

<220>  
<221> CDS  
<222> (1).. (15)  
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<400> 245  
agc tcc tgg atg cac  
Ser Ser Trp Met His  
1 5

15

<210> 246  
<211> 5  
<212> PRT  
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<400> 246

Ser Ser Trp Met His  
1 5

<210> 247  
<211> 51  
<212> DNA  
<213> Mus musculus

1 0 4 / 1 1 0

<220>  
<221> CDS  
<222> (1).. (51)  
<223>

<400> 247  
tac att aat cct agc agt ggt tat act aag tac aat cgg aag ttc agg 48  
Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Lys Tyr Asn Arg Lys Phe Arg  
1 5 10 15

gac  
51  
Asp

<210> 248  
<211> 17  
<212> PRT  
<213> Mus musculus

<400> 248  
Tyr Ile Asn Pro Ser Ser Gly Tyr Thr Lys Tyr Asn Arg Lys Phe Arg  
1 5 10 15

Asp

<210> 249  
<211> 27  
<212> DNA  
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<220>  
<221> CDS  
<222> (1).. (27)  
<223>

<400> 249  
ggg ggt aac ggt tac tac ttt gac tac 27  
Gly Gly Asn Gly Tyr Tyr Phe Asp Tyr



1 0 5 / 1 1 0

1 5

<210> 250  
<211> 9  
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<400> 250

Gly Gly Asn Gly Tyr Tyr Phe Asp Tyr  
1 5

<210> 251  
<211> 33  
<212> DNA  
<213> Mus musculus

<220>  
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<222> (1)..(33)  
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<400> 251  
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Lys Ala Ser Gln Asp Val Gly Thr Ala Val Ala  
1 5 10

33

<210> 252  
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<400> 252

Lys Ala Ser Gln Asp Val Gly Thr Ala Val Ala  
1 5 10

<210> 253  
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<213> Mus musculus

<220>

<221> CDS

<222> (1)..(21)

<223>

<400> 253

tgg gca tcc acc cgg cac act

21

Trp Ala Ser Thr Arg His Thr

1

5

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<211> 7

<212> PRT

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Trp Ala Ser Thr Arg His Thr

1

5

<210> 255

<211> 24

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)..(24)

<223>

<400> 255

cag caa tat agc aac tat atc acg

24

Gln Gln Tyr Ser Asn Tyr Ile Thr

1

5

<210> 256

<211> 8

<212> PRT

<213> Mus musculus

1 0 7 / 1 1 0

<400> 256

Gln Gln Tyr Ser Asn Tyr Ile Thr  
1 5

<210> 257

<211> 15

<212> DNA

<213> Mus musculus

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<221> CDS

<222> (1).. (15)

<223>

<400> 257

gac aac aac atg gac  
Asp Asn Asn Met Asp  
1 5

15

<210> 258

<211> 5

<212> PRT

<213> Mus musculus

<400> 258

Asp Asn Asn Met Asp  
1 5

<210> 259

<211> 51

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (51)

<223>

1 0 8 / 1 1 0

<400> 259

gat att aat act aaa agt ggt ggt tct atc tac aac cag aag ttc aag 48  
Asp Ile Asn Thr Lys Ser Gly Gly Ser Ile Tyr Asn Gln Lys Phe Lys  
1 5 10 15

ggc

51

Gly

<210> 260

<211> 17

<212> PRT

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<400> 260

Asp Ile Asn Thr Lys Ser Gly Gly Ser Ile Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

<210> 261

<211> 30

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (30)

<223>

<400> 261

agg agg agc tac ggc tac tac ttt gac tac 30  
Arg Arg Ser Tyr Gly Tyr Tyr Phe Asp Tyr  
1 5 10

<210> 262

<211> 10

1 0 9 / 1 1 0

<212> PRT

<213> Mus musculus

<400> 262

Arg Arg Ser Tyr Gly Tyr Tyr Phe Asp Tyr  
1 5 10

<210> 263

<211> 33

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (33)

<223>

<400> 263

aag gcc agt cag aat gtg ggt act gct gta gcc  
Lys Ala Ser Gln Asn Val Gly Thr Ala Val Ala  
1 5 10

33

<210> 264

<211> 11

<212> PRT

<213> Mus musculus

<400> 264

Lys Ala Ser Gln Asn Val Gly Thr Ala Val Ala  
1 5 10

<210> 265

<211> 21

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (21)

1 1 0 / 1 1 0

<223>

<400> 265

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Ser Ala Ser Tyr Arg Tyr Ser  
1 5

21

<210> 266

<211> 7

<212> PRT

<213> Mus musculus

<400> 266

Ser Ala Ser Tyr Arg Tyr Ser  
1 5

<210> 267

<211> 27

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)..(27)

<223>

<400> 267

cag caa tat aac agc tat cct ctc acg  
Gln Gln Tyr Asn Ser Tyr Pro Leu Thr  
1 5

27

<210> 268

<211> 9

<212> PRT

<213> Mus musculus

<400> 268

Gln Gln Tyr Asn Ser Tyr Pro Leu Thr  
1 5